What Is Claimed Is:

1. A method for triggering a heterodyne interferometer (1) comprising two acousto-optical modulators (20, 30) situated in separate light paths, a receiver (70) generating an analog signal (71) and a downstream A/D converter (80) converting the analog signal (71) into a digital signal (81), in which the one acousto-optical modulator (20) is triggered at a modulation frequency f_1 and the other acousto-optical modulator (30) is triggered at another modulation frequency f_2, the difference between modulation frequencies f_1 and f_2 forming a heterodyne frequency f_{Het}, and the conversion of the analog signal (71) into the digital signal (81) being performed in the A/D converter (80) using sampling frequency f_a, wherein at least two of the frequencies, i.e., of modulation frequencies f_1, f_2 and sampling frequency f_a are formed from a fundamental frequency f_{quartz} of a common oscillator (100).

2. The method as recited in Claim 1, wherein modulation frequencies f_1 and f_2 are generated from fundamental frequency f_{quartz} by the method of direct digital synthesis (DDS) by incrementing a digital accumulator of word width N by an integer Z for each clock pulse of the oscillator (100), designed as a quartz oscillator and having fundamental frequency f_{quartz}.

3. The method as recited in Claim 1 or 2, wherein modulation frequencies f_1 and f_2 are generated separately in separate DDS units (110, 120) from fundamental frequency f_{quartz}.

4. The method as recited in one of Claims 1 through 3, wherein a sawtooth-shaped value curve of the contents of the digital accumulator is formed by incrementing the digital accumulator.

5. The method as recited in one of Claims 1 through 4, wherein the value curve in the digital accumulator is interpreted as a phase value of a cosine oscillation,
a sample value of a cosine oscillation is determined from the phase value via a table stored in a ROM and/or algorithmic methods and
this cosine oscillation is smoothed in an analog low-pass filter.

6. The method as recited in one of Claims 1 through 5, wherein sampling frequency f_a for the A/D converter (80) is formed from modulation frequency f_1 by a divider unit (130) or
sampling frequency f_a for the A/D converter (80) is formed from modulation frequency f_2 by a divider unit (120).

7. The method as recited in one of Claims 1 through 6, wherein sampling frequency f_a is an integral multiple of heterodyne frequency f_{Het}.

8. The method as recited in Claim 7, wherein the ratio between the sampling frequency f_a and the heterodyne frequency f_{Het} is a factor of at least 2.

9. A device made up of a triggering unit and a heterodyne interferometer (1) having two acousto-optical modulators (20, 30) situated in separate light paths, a receiver (70) which supplies an analog signal (71) and a

downstream A/D converter (80) for forming a digital signal (81) from the analog signal (71), the one acousto-optical modulator (20) being triggered by a modulation frequency f_1 and the other acousto-optical modulator (30) being triggered by another modulation frequency f_2, and the difference between modulation frequencies f_1 and f_2 corresponding to a heterodyne frequency f_{Het}, and a sampling frequency f_a being provided for the conversion of the analog signal (71) into the digital signal (81), wherein the triggering unit for generating at least two of the frequencies of modulation frequencies f_1, f_2 and sampling frequency f_a has a common oscillator (100) having fundamental frequency f_{quartz}.

10. The device as recited in Claim 9, wherein a direct digital synthesizer (DDS) is provided for generating modulation frequencies f_1 and f_2 from fundamental frequency f_{quartz}, this direct digital synthesizer having a digital accumulator of word width N which is incrementable by an integer Z via an incrementation stage per each clock unit of the oscillator (100) designed as a quartz oscillator and having a clock frequency f_{quartz}.

11. The device as recited in Claim 9 or 10, wherein separate DDS units (110, 120) are provided for generating modulation frequencies f_1 and f_2.

12. The device as recited in one of Claims 9 through 11, wherein a divider unit (130) is provided for generating sampling frequency f_a from modulation frequency f_1 or a divider unit (140) is provided for generating sampling frequency f_a from modulation frequency f_2.

13. The device as recited in one of Claims 9 through 12, wherein the division ratio of the divider unit (130, 140) is an integer.

14. The device as recited in Claim 13, wherein the division ratio of the divider unit (130, 140) is at least 2.